

CLAIMS

1 - Keyboard that comprises:

- at least one key, each of which comprises:
 - at least two superposed filters (612 to 614 and 622 to 624), each of which corresponds to a value of the physical characteristic of the light and to a message to be displayed on said key and
 - a contactor (616, 626) adapted to supply a signal representative of the interaction between a user and the said key,
- a light source (630) adapted to light up, by backlighting, the superposed filters of at least one key,
- a modulation means (640) that modulates at least one physical characteristic of said light source, adapted to modulate at least one value of the physical characteristic of the light emitted by the light source; in order to make visible a message placed on a said filter of at least one key and
- a reception means (850) that receives signals coming from each said contactor, said reception means being adapted to assign different symbols to said signals, in line with the switching carried out by the switching means (840).

2 – Keyboard according to claim 1, wherein each filter is made up of a transparent or translucent medium on which the message is printed.

3 – Keyboard according to any of claim 1 or 2, wherein the light source (630) is adapted to light up jointly, by backlighting, a plurality of keys and their superposed filters, the modulation means (640) of at least one physical characteristic of said light source being adapted to modulate at least one value of the physical characteristic of the light emitted by the light source and received by a plurality of keys, in order to jointly make visible the messages placed on a said filter of each said key.

4 – Keyboard according to any of claim 1 to 3, wherein each filter has transparent areas and areas with absorption spectra respectively corresponding substantially to the emission spectra of the light source, for the different modulation values of the modulation means.

5 – Keyboard according to any of the claims 1 to 4, wherein each key comprises at least three superposed filters, the filters having transparent areas and areas with absorption spectra respectively corresponding substantially to the emission spectra of the light source, for at least three modulation values of the modulation means.

6 – Keyboard according to any of claim 1 to 5, wherein the modulation means (640) is adapted to modify the spectral band of light reaching said filters (612 to 614 and 622 to 624) and said filters provide spectral bands of different transparency.

7 – Keyboard according to any of claim 1 to 6, wherein the light source (630) comprises a

light-emitting diode whose spectral band of emission varies according to the electrical characteristics of the power signal that is applied to it and the modulation means is adapted to modify said electrical characteristics.

8 – Keyboard according to any of claim 1 to 7, wherein the light source comprises at least two independent electro-optical transducers (130, 132, 230, 232, 330, 332, 430, 432, 530, 532) placed in parallel on an optical path of light rays coming from the light source and going to the key, the modulation means (140, 240, 340, 440, 540) being adapted to control alternately the light emission by one or other of the electro-optical transducers.

9 – Keyboard according to any of claim 1 to 8, wherein the modulation means (240) is adapted to modify a principal axis of polarization of the light rays reaching the filters (212, 214, 222, 224) and the filters present different transparencies according to the axes of polarization.

10 – Keyboard according to any of claim 1 to 9, wherein the filters (412, 414, 416) comprise components adapted to producing constructive or destructive interferences depending on the angle of incidence of the light rays and the modulation means (440) is adapted to modify the angle of incidence of the light rays emitted by the light source (430, 432).

11 – Keyboard according to any of claim 1 to 10, wherein the filters (712, 714, 722, 724) comprise holograms and the light source comprises at least two electro-optical transducers (730 à 736) adapted to light up said holograms with different angles of incidence in order to make different symbols or messages appear on the key, the modulation means being adapted to modify the angle of incidence of the light rays emitted by the light source.

12 – Keyboard according to any of claim 1 to 11, wherein the filters (412, 414, 416) comprise components adapted to produce total or partial reflections depending on the angle of incidence of the light rays and the light source (430, 432) comprises at least two electro-optical transducers adapted to light up said filters with different angles of incidence in order to make different symbols or messages appear on the key, the modulation means being adapted to modify the angle of incidence of the light rays emitted by the light source.

13 – Keyboard according to any of claim 1 to 12, wherein the filters (712, 714, 722, 724) comprise components adapted to realize different light transfers depending on the angle of incidence of the light rays and the light source comprises at least two electro-optical transducers (730, 732, 734, 736) adapted to light up said filters with different angles of incidence in order to make different symbols or messages appear on the key, the modulation means being adapted to modify the angle of incidence of the light rays emitted by the light source.

14 – Keyboard according to any of claim 1 to 13, wherein the optical path going from the light source to the key comprises at least one optical fiber (734, 736).

15 – Keyboard according to any of claim 1 to 14, wherein the optical path going from the light

source to the key comprises at least one optical reflector element.

16 – Keyboard according to any of claim 1 to 15, wherein at least two of said filters, for at least one key, are each made up of an assembly of filters (1112, 1114, 1122, 1124, 1162, 1163, 1164, 1172, 1173, 1174), said filter assemblies being juxtaposed alternately in the key.

17 – Electronic device chosen from among a personal digital assistant, an organizer, a telephone, a games console, a portable computer, an Internet access terminal, an Automatic Teller Machine, a watch; a remote control, a portable music player, a positioning system and an audiovisual signal receiver, office or leisure electronic equipment, a facsimile machine, a photocopier, a scanner, a recorded media reader, a home system installation, a household appliance, a medical device, a measurement device, an automated analysis device, automobile equipment, a signboard, a switch, a games system, a decorative element, a lamp, and/or a display panel, that comprises a key, according to any of claims 1 to 16.

18 - Display method comprising:

- a step of switching a light source adapted to light up, by backlighting, at least one key comprising each:

- o at least two superposed filters (612 to 614 and 622 to 624), each filter corresponding to a value of the physical characteristic of the light and to a message to be displayed on said key and
 - o a contactor (616, 626) adapted to deliver a signal representative of the interaction between the user and said key

- a step of modulating at least one value of the physical characteristic of the light emitted by the light source, in order to jointly make visible a message placed on a said filter of each key and

- a step of receiving signals coming from each of said contactors, during which different symbols are assigned to said signals, depending on the state of the switching means (840).